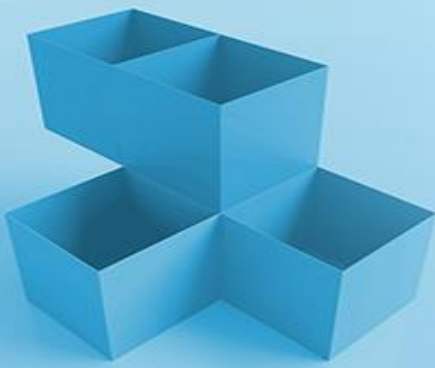


# Automate Storage Administration Using ONTAP REST API and Ansible



Delivery: Instructor-led-training (ILT) and virtual ILT (VILT)

Duration: 3 days

## Course Description

This training prepares you to automate storage administration of a NetApp® ONTAP® based system by using modern REST APIs and Ansible. You learn about the structure of an ONTAP REST API. You write Python programs that use the Python client library to create an aggregate, a storage VM (storage virtual machine, also known as SVM), a flexible volume, a qtree, a NetApp Snapshot™ copy, and so on. You learn how to invoke the REST API method in a Windows PowerShell environment to demonstrate popular use case scenarios. You use the Ansible framework to automate and deploy storage administration tasks through NetApp ONTAP modules for Ansible. Finally, you use Python programs and Ansible playbooks to configure your system for CIFS, NFS, and SAN protocols.

This training includes classroom lecture, coding demonstrations, and hands-on programming activities.

## Audience

Customers, channel partners, OEM partners, NetApp Authorized Learning Partners (ALPs), global systems integrators (GSIs), third-party software developers, infrastructure and professional services engineers, and NetApp employees

## Job Role

- Systems administrator, cloud architect, operator, data protection specialist, enterprise architect, integration developer, engineer
- Presales, Sales, customer success manager, solutions engineer (SE), technical support engineer, Support, technical support, and so on

## Prerequisites

- *ONTAP Cluster Administration*
- Python programming experience required
- Familiarity with Unix commands

## Objectives

This course focuses on enabling you to do the following:

- Describe ONTAP REST APIs and the Ansible framework
- Implement REST API methods in your Python programs to create, access, update, and delete ONTAP resources such as aggregates, storage VMs, volumes, and so on
- Illustrate how to invoke ONTAP REST API methods from within the PowerShell environment
- Illustrate the Ansible framework to call NetApp ONTAP modules from within a playbook for automation of storage administration
- Configure CIFS, NFS, and SAN protocols programmatically by using Python programs and Ansible playbooks
- Describe performance monitoring of an ONTAP based system

## Course Content

This course includes the following modules, lessons, and exercises:

	Lessons	Exercises
<b>Module 1: ONTAP REST API</b>	<ul style="list-style-type: none"><li>• What is REST API?</li><li>• ONTAP REST API documentation</li><li>• Python client library</li></ul>	None
<b>Module 2: REST API use cases: Python programming</b>	<ul style="list-style-type: none"><li>• Create an aggregate, a storage VM, and a volume</li><li>• Volume management</li><li>• Create a Snapshot copy</li></ul>	Writing a Python program
<b>Module 3: Windows PowerShell for REST API</b>	<ul style="list-style-type: none"><li>• Introduction to NetApp PowerShell Toolkit</li><li>• Use case scenario of REST API methods</li></ul>	Writing ONTAP REST API methods in Windows PowerShell
<b>Module 4: Automation using Ansible</b>	<ul style="list-style-type: none"><li>• Introduction to Ansible</li><li>• Basics of YAML and YML</li><li>• Basics of Ansible</li><li>• Installing Ansible</li><li>• Ansible playbooks</li><li>• Ansible modules</li><li>• Coding demonstration of simple playbooks</li></ul>	Using Ansible
<b>Module 5: CIFS configuration</b>	<ul style="list-style-type: none"><li>• CIFS configuration by a Python program</li><li>• CIFS configuration by an Ansible playbook</li></ul>	Provisioning and configuring CIFS
<b>Module 6: NFS configuration</b>	<ul style="list-style-type: none"><li>• NFS configuration by a Python program</li><li>• NFS configuration by an Ansible playbook</li></ul>	Configuring NFS

Lessons			Exercises		
<b>Module 7: SAN configuration</b>	<ul style="list-style-type: none"> <li>SAN REST API documents</li> <li>iSCSI configuration</li> <li>FCP and NVMe-oF configuration</li> <li>Ansible modules and playbooks</li> </ul>	Provisioning resources			
<b>Module 8: Performance monitoring</b>	<ul style="list-style-type: none"> <li>ONTAP performance</li> <li>Performance metrics</li> <li>Collecting ONTAP metrics</li> </ul>	Collecting and using performance metrics			

Course ID: STRSW-ILT-RSTAPI  
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